

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Vehicle Control Pedals

- WE, DAIMLER-BENZ AKTIENGESELLSCHAFT, of Stuttgart-Unterturkheim, Germany, a company organised under the laws of Germany, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:
- This invention relates to control pedals, particularly accelerator pedals, for motor vehicles, in which a first of two separable connecting parts of a detachable connection is disposed on the foot plate, the second connecting part being fastened rigidly to a part of the floor of the vehicle, while one of the connecting parts has at least one shaped element which is adapted to be introduced into a corresponding cutout in the other connecting part.
- The problem underlying the invention consists in improving an accelerator pedal of this type. According to the invention, in a vehicle there is provided a control pedal comprising a first of two separable connecting parts of a detachable connection disposed on a foot plate and a second connecting part fastened rigidly on a part of the floor of the vehicle, one of said connecting parts having at least one shaped element which is adapted to be introduced into a corresponding cutout in the other connecting part so as to make a positive connection, wherein the first connecting part is connected to the foot plate in such a manner that the foot plate is pivotable thereon and has a slotted fitting for receiving a shaped plate-like element of the second connecting part.
- The invention provides a number of advantages. The shaped plate-like element and the slotted fitting form a torsionally stiff connection, so that the forces acting on the pedal about its longitudinal axis are reliably supported. Consequently, the connection between the accelerator pedal and the linkage leading to the torque adjusting means can be of very simple construction. The accelerator pedal can be installed quickly and effortlessly by simply pushing the slotted fitting over the shaped plate-like element.
- Further features and advantages of the invention can be seen from the following description which describes with reference to the accompanying drawings, an example of construction of an accelerator pedal having the features of the invention. In the drawings, Figure 1 shows a section through the accelerator pedal with the connecting parts, Figure 2 is a view in the direction of the arrow II in Figure 1, and Figure 3 is a cross-section through the slot frame of the first connecting part, taken on the line III-III in Figure 2.
- The foot plate 10 of the accelerator pedal is connected by a thin flexible web 11 to the first connecting part 13, in such a manner that it is swivellable about an axis 12. The parts 10, 11, and 13 are made in one piece of plastics material. The first connecting part 13 has a slotted fitting 14 for receiving a shaped plate-like element 15 of the second connecting part 16. The connecting part 16 is provided with a bent-over arm 17, which is rigidly fastened to a part of the floor of the vehicle in a manner which is not illustrated.
- Both the axis 12 and the slot 18 of the slotted fitting 14 extend parallel to the foot support surface 19 of the foot plate 10. The support surface 19 may be covered by a resilient damping covering.
- The shaped element 15 has a selected total

clearance S laterally in relation to the slot 18, so that the foot plate 10 is disposed with movability in relation to the second connecting part 16 in the plane of the drawing in Figure 2. Errors in alignment between the foot plate 10 and the linkage (not illustrated) leading to the torque adjusting means can thus be compensated.

Through the cooperation of the torsionally stiff slotted fitting 14 with the shaped plate-like element 15, the foot plate 10 is advantageously supported when forces act about its longitudinal axis, without the detachment of the connecting parts 13 and 16 being possible. The lever linkage at the other end (not shown) of the foot plate 10 can thus simply be articulated to the latter in a simple manner. Special measures for guiding or supporting the foot plate 10 are thus not necessary at its end near the linkage.

The installation of the accelerator pedal is also simple and time-saving, because the first connecting part 13 is fastened by the slotted fitting 14 to the second connecting part 16 by simply being pushed over the shaped element 15.

Automatic locking between the two connecting parts 13 and 16 is achieved through a rigid stop edge 20 on the shaped element 15, against which stop edge a resiliently deflectable stop edge 21 on the slotted fitting 14 is supported after the shaped element has been introduced into the slot 18.

The stop edge 21 is disposed on a tongue-shaped wall part 22 of the fitting 14. The wall part 22 has an engaging surface 23 which is inclined in relation to the slot 18 and on which the front edge 27 of the shaped element 15 acts when introduced into the slot 18. During the installation of the accelerator pedal the stop edge 21 is in this way automatically moved into a detaching position, in which this edge is situated at a distance $a + b$ from the opposite outer surface 24 of the fitting 14. In the locked position illustrated in Figure 1 the stop edge 21 is at a distance $a - b$ from the surface 24 which is longer by a determined spring-in path than the distance C (Figure 3) between the stop edge 21, when freed by the spring action, from the surface 24.

As the result of this arrangement the stop part 22 bears by a projection 25 by force constraint against the shaped element 15 when the stop edge 21 is in the locked position, so that rattling noises between the connecting parts 13 and 16 are avoided. For this purpose the clearance between the inside width B (Figure 3) of the slot 18 and the thickness D of the shaped element can be made adequately small.

In order to be able to release the locking of the two connecting parts 13 and 16 in a simple manner, the wall opposite the stop part 22 can be provided with a hole 26 into

which a suitable tool for deflecting the stop part 22 can be inserted. An aperture 28, one wall part of which is formed by the stop edge 20, is provided in the shaped element 15 coaxially to the hole 26.

WHAT WE CLAIM IS:—

1. In a vehicle, a control pedal comprising a first of two separable connecting parts of a detachable connection disposed on a foot plate and a second connecting part fastened rigidly on a part of the floor of the vehicle, one of said connecting parts having at least one shaped element which is adapted to be introduced into a corresponding cutout in the other connecting part so as to make a positive connection, wherein the first connecting part is connected to the foot plate in such a manner that the foot plate is pivotable thereon and has a slotted fitting for receiving a shaped plate-like element of the second connecting part.

2. A pedal according to Claim 1, wherein the first connecting part is connected by a flexible web to the foot plate.

3. A pedal according to Claim 2, wherein the first connecting part, the web, and also the foot plate are made in one piece, of a synthetic plastics material.

4. A pedal according to any one of Claims 1 to 3, wherein the shaped element is located in a corresponding slot in the slotted fitting in such a manner as to be movable in its own plane with a selected clearance.

5. A pedal according to any one of Claims 1 to 4, wherein one connecting part has a rigid stop and the other connecting part has a stop resiliently yieldable from a locking position to a releasing position.

6. A pedal according to Claim 5, wherein the resiliently yieldable stop of one connecting part is brought into the releasing position on the insertion of the shaped element into the corresponding slot through engagement of the other connecting part, and in one position of the shaped element springs automatically into the locking position in which the rigid stop cooperates with the resiliently yieldable stop and the release of the connecting parts is prevented.

7. A pedal according to any one of Claims 4 to 6, wherein a tongue-shaped wall part of the slotted fitting projects into the slot of the first connecting part.

8. A pedal according to Claim 7, wherein the shaped element has an aperture for the engagement of the tongue-shaped wall part.

9. A pedal according to Claim 7, wherein the wall of the slotted fitting lying opposite the tongue-shaped wall part has an opening.

10. A pedal according to any one of Claims 7 to 9, wherein the tongue-shaped wall part has at least one projecting part

which in the locking position lies under initial stress against the shaped element.

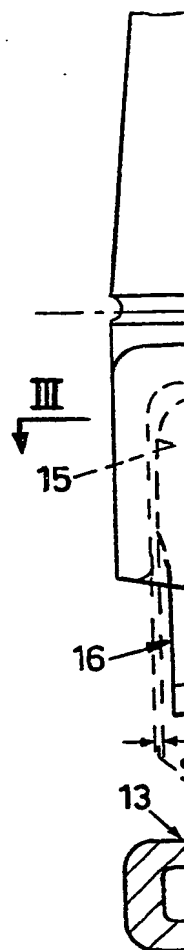
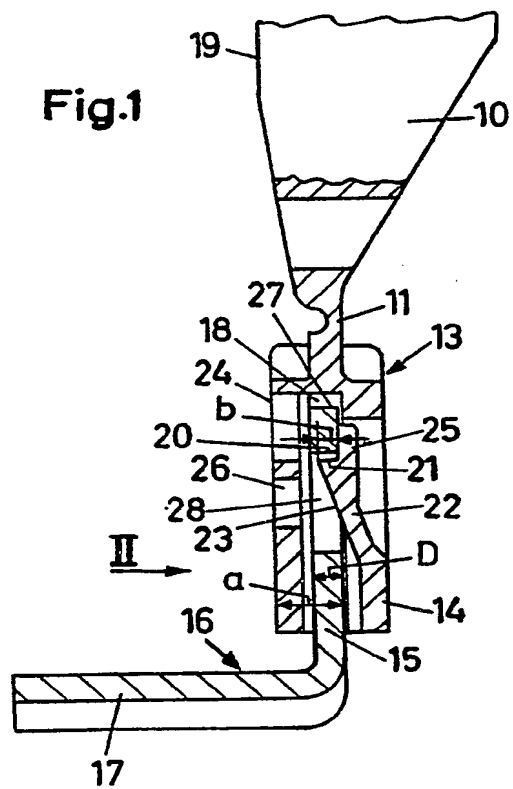
11. In a vehicle, a control pedal substantially as hereinbefore described with 5 reference to the accompanying drawings.

JENSEN & SON,

Agents for the Applicants,
77, Chancery Lane, London, W.C.2.
Chartered Patent Agents.

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be obtained.

Fig.1



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1 SHEET

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This drawing is a reproduction of the Original on a reduced scale.

